

Aviation News

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New Helicopter Flies: Although more than 20 helicopter projects are under way, the P-V Engineering Forum was the second in recent months to make a public flight test. Above is a single passenger, 1,000-lb. model hovering over an Army jeep before military officials at Washington National Airport last week.

Plane Output on Upward Trend

New production spurt forecast after disappointing September figures; Army, Navy press for adoption of incentive plans.

Feeder System Equipment Needs Revealed

Proponents testify before CAB that manufacturers could meet requirements but express doubt projects would be self-supporting.

Luftwaffe's New Strength Comes from Russia

Nazi air force transfers planes but is getting no stronger, military commentator says; Axis uses tactics that led to Africa rout.

U. S. Chamber's Route Policy Challenged

Pan American asks reconsideration, says stand is in fundamental conflict with views of air transport industry.

U. S. Policy on Contract Termination Near

Expected to develop at hearings just opened before subcommittee of Senate Military Affairs Committee.

OWI Report Reviews Warplane Progress

Finds performance of U. S. aircraft in combat vindicates American design. Box score shows U. S. plane superiority.

**NOW! NEW FLOOD OF VITAL BASE STOCK FOR
WORLD'S FINEST AVIATION GASOLINE!**



FIRST REVOLUTIONARY TCC REFINERY NOW IN FULL PRODUCTION!



The opening of the world's first commercial TCC refinery at Beaumont, Texas—marks a tremendously important milestone in America's aviation gasoline program.

Climaxing 10 years' petroleum research, Socosy-Vacuum announces the first of the U.S.A.'s 31 new TCC Units—to produce a flood of the world's finest base stock for 100 Octane aviation gasoline.

NOW America's super war and turbo planes are insured the finest aviation fuel in volume for Victory. Our basestock can carry heavier loads farther to increase their rate of destruction—our fighters can hit even faster and more accurate.

For this is no ordinary refinery. It is the first of 31 new plants now under construction in the U.S.A., employing Socosy-Vacuum's revolutionary Thermo-Catalytic Cracking Process.

This process gives the Beaumont plant double wartime importance. For it not only produces finer aviation gasoline in greater quantity, but also produces vital byproducts for the \$750,000,000 rubber program.

Its use in the new plants under construction increases the yield per

barrel of crude. It helps save steel.

Today, the TCC Process—developed exclusively by Socosy-Vacuum—is giving America itself aviation, still better super octane fuels. And the opening of this first plant at Beaumont is not only an important step toward making the air war—it's also a promise of new "Flying Horsepower" for America's post-war peace planes and cars.

SOCOSY VACUUM OIL CO., INC.
and Affiliates, Magnolia Petroleum Co.,
General Petroleum Corp. of California



**FOR FIGHTING
AMERICA**

FLYING HORSEPOWER

THE AVIATION NEWS

Washington Observer

CONTRACT TERMINATION—Seriousness of this problem continues to grow and some high officials here have said terminations in aviation industry will be unmanageable and it will not always be possible to replace terminated contracts with new ones. Industry leaders are emphatic in their belief that every aircraft company should go into the situation thoroughly, assigning officials to this job early. If necessary, and particularly in start educating both pilots and manufacturers in which aircraft plants are located as in the seriousness of the situation.

COUNCIL NAMES CHAIRMAN—Members of the National Aircraft War Production Council, all of whom are also members of the Aeronautical Chamber of Commerce, have designated the chairman as their agent and spokesman in matters concerned with termination and compensation on an industry-wide basis. These are questions which do not properly come within the province of the council—formed to produce more airplanes faster. In taking this action, the industry shows further evidence of teamwork and common action for the common good.

BOMBING OF GERMANY—Effective as bombings have been, the industrial strength of Germany is held by War Department officials still to be high. German destruction have lost none of their impressiveness and are cautiously at work on new weapons to recent developments have shown. Under-Secretary of War Peterson claims reports indicate the spirit of German troops is high. He added significantly that we can be sure the blows struck in 1944 will determine the outcome, although nobody can predict the end. Germany's plane losses, however, have exceeded production. Until midsummer, the Germans were said to be building up a surplus of from 250 to 400 planes a month.

ROCKET GUNS—There are some indications that the Nazis' surprise rocket gun appeared late in the German air force as far as our scouting superiority. On the basis of official claims, the Germans lost at least 500 fighters in an eight-day Allied offensive. It must not be overlooked, however, that our losses have been heavy in bombers, each carrying a ten-man crew, and that these losses do not include the dead and wounded in planes which return to British bases.

DC-3 FLOATS—There have been some reports that the amphibian floats on the DC-7s

are not working as well as had been hoped, and there appears little likelihood of going into mass production of amphibian DC-7s in the near future. There is only one new, the prototype. The floats were designed in an attempt to make them suitable to add to the lift of the plane, since they were too big, but it appears that the lift supplied was not enough to make an appreciable difference in the extra weight of drag.

LITTLE RESPONSE—CAA officials are a little unhappy over the industry's failure to respond to requests for comment on proposed regulations changes. Latest example was Section 24, an ordinance of aircraft and engine mechanics, which CAA wants to modernize. Six hundred copies of the suggested amendment went out and 18 comments came back. Most of these said, sure, something should be done about the situation, but this probably is not the solution, in fact, we don't know just what should be done about it. So the new regulation is being re-circulated. Things like this are said to happen on a good many of the proposed changes.



DAL's "New Airliner of Tomorrow"

AIR MAIL DELAY—There are indications that foreign traders are becoming increasingly annoyed over delays in air mail delivery from Brazil which they say is resulting from the triple censorship of American, Brazilian and British. Such correspondence, which ordinarily would be delivered in three days, is said by some traders to have been so delayed by censorship that six weeks and more is sometimes required for delivery.



The Eastern Air Line KELLETT which flew mail for a full year from the roof of the Philadelphia Penn. Club. One of many Kellett "buses" in its years of pioneering the convenience of rotary wing service.

THE PIONEER LOOKS TO TOMORROW

TODAY in cooperation with the U.S.A.A.F. Kellett is speeding the engineering development and production of autogiros and helicopters for military needs. We cannot give details now. Five Kellett planes are also applying their aeronautical ingenuity to the production of important parts for some of America's most famous fighters and bombers—Thunderbolts, Liberators, Warhawks and Mustangs... while an expanding corps of forward-looking engineers continues Kellett's rotary wing development for the future.

TOMORROW we look forward to opportunities for Kellett to our name and coast in producing electric power lines, oil pipe lines, in transporting mail and passengers, distilling crops—and in a wide variety of services for industry, commerce, forestry and agriculture. Kellett's years of experience and accomplishments continue to attract pioneering minds, men who, with us, see vast opportunities for rotary wing programs in the post-war era. Kellett Aircraft Corporation, Upper Merion (Philadelphia), Pennsylvania.

KELLETT

OLDEST ROTARY WING AIRCRAFT MANUFACTURING COMPANY



A Kellett autogiro used behind Paul as his weight on the beach pole.



Bushnell used to be constantly the constant Kellett maneuverability.



and Kellett is looking in a future of expanding service to the nation.

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Aviation News

McGraw-Hill Publishing Co., Inc.

OCTOBER 15, 1943

New Spurt in Plane Output Looms After September Production Lag

Disappointing unit total last month traced mainly to design changes; Army and Navy press for widespread adoption of incentive plans in effort to meet increased needs.

By SCOTT HERSHY

October aircraft production is reported on the upturn after last month's disappointing figure and production men are cautiously hopeful of boosting the total to close to 5,000 units.

Even though September unit production was virtually the same as in August—7348 in August 1942—weight of aircraft produced was up about 3 percent and with the emphasis on heavier models, October weight production was expected to show a considerable gain.

Thought vs. Units—Many factors and uncertainties are involved, however, and any increases now are bound to be gradual. While production men would prefer using weight as the basis for production totals, and figures have been so widely used that units probably will continue as the measuring stick.

Failure of September production to show a gain over August was due to a falling off in two or three companies and not a production lag in the industry generally. Reports from these plants, whose production was off in September due to design changes, production changes and other unavoidable difficulties in warplane output, indicate these problems have been generally overcome and that production will more nearly approach normal this month.

Manpower—Industry continued to struggle with manpower problems, particularly on the West Coast, where the new manpower program is beginning to get into operation. West Coast aircraft men said it was still too early to get a complete picture of the results of the new set-up and that, meanwhile, they, like the rest of the industry, were continuing their programs of labor utilization to boost production.

In the constant search for methods to increase the output of warplanes which will meet the high demand to satisfy the demands of the armed services—and the industry, either, for that matter—the industry generally is giving close study to various incentive pay plans.

Pressure—There is pressure from the armed services and from the War Production Board for the installation of incentive systems and general agreement that production could be increased if equitable programs were worked out.

To what extent they will be successful in finding such programs is a matter of conjecture, in view of labor's opposition to such plans. It should be noted, however, that the CIO United Automobile Workers, dominant CIO union in the aircraft

industry, did have a minority report on the question which indicates some sentiment for incentive programs.

Objections—It is difficult to determine at this stage whether pressure for incentive programs from the armed services and WPPB will make itself felt on down the line to organized labor. With the Army and Navy calling for warplanes in ever-increasing numbers and with operations expanding in almost all war theaters, objections may have to be set aside in favor of all-important production.

Aircraft manufacturers indicate the absolute necessity for increased production, as expressed by industry executives at recent conferences in Washington, is beginning to be felt all down the production line.

AAF Puts 100 Planes On New Feeder Service

Norwegian transports delivered to 11 coastal depots of ASC.

Distribution of 100 Norwegian Norwegian transports to the 11 coastal depots of the U.S. Army Air Forces Air Service Command has been completed for establishment of a feeder service from small, sub-deposits, not now adequately served by conventional airlines or Air Transport Command, it was announced by ASC headquarters, Patterson Field, Fairfield, Ohio.

Schedular—Maj. Gen. Walter H. Frank, ASC commander, and a study had been started on the possibility of reallocating some existing main-line routes of the Domestic Transport division, ATC, in view of the new feeder service. Schedules will be based on estimated cargo volume and on recommendations from the field detachments of the 36th Air Freight Wing, ASC ground handling organization.

The high-winged, single-engine Canadian-built Norsonair was selected as the most suitable available plane for the small shipments and short-hauls involved. The plane has set up a record for ruggedness and dependability as a transport in Northern Canada.

Martin Mars Tested

The Martin Mars, world's largest flying boat, will test the Naval Air Transport Service for operation as an oceanic cargo carrier after completion of final tests and verification by the Navy Staff Board of the Mars performance record.

Recent completion by the Mars of a difficult endurance flight of 24 hr. and 17 min. announced by the Navy indicated that production orders for the huge flying boat probably will follow formal acceptance after final tests are made. The Mars traveled a distance of 4,380 mi. during the endurance test and landed with sufficient gas in her tanks for several hours more flying. The distance traveled was equal to a trip from Baltimore to Japan.

New Helicopter Put Through Paces In Washington Demonstration

Single-seater, 1,000-lb. model revealed as child of type in air out of over 26 projects under way. Built by P-V Engineering Forum.

By BLAINE STUBBSFIELD

A single-seater, 1000-lb. helicopter, designed and built by the P-V Engineering Forum, was flown before the press and other observers at Washington National Airport last week.

At least 24 helicopter projects are under way, but the P-V is revealed to be the third one in the air. The other two are Sikorsky's VS-300 and the Platt LePage. The latter is reported out of commission at this time, due to an accident.

Sponsored by PCA—The P-V has been flown since early last spring. It is painted in the standard colors of Pennsylvania Central Airlines, which is sponsoring the development in its undeveloped extent.

Frank N. Pasewski, president of the P-V firm, who has only 20 in total flying time, including 15 in fixed wing planes, has flown all the test flying, including the public demonstration. Robert DeLand, chief engineer, discussed technical features.

Mechanism Simplified—The PV-2, this being the second version, has a three-bladed rotor with a diameter of 26 ft. Its lift and control principles are conventional, but com-

plex gear mechanisms are simplified. "Total pitch" of the blades—that is, the constant pitch at which they make the complete revolution—is controlled by a ratchet lever at the pilot's left. Thrust line movement is continuous with the movement of this lever, or independent, at the pilot's option.

Controls—"Cyclic" pitch is controlled by a universal lever suspended from the canopy. This lever moves the blades which increase and decrease pitch during certain segments of the revolution, giving thrust and travel forward, backward or to the left or right, whichever way the lever is moved. Incidentally, forward thrust can be used for taxiing on the ground. This model is equipped with conventional wheels and shock absorbers.

Rudder action is provided by a large propeller, 3 ft in diameter, and shaft-driven, on the tail, blades of which are not pushed either way from feather position by movement of the foot rudder bar.

Engine—The engine is a Franklin, 4-cylinder, 180 hp, exposed flat type, air-cooled, 90 hp. It is mounted with its mainshaft verti-

cal, just behind the pilot. To stand the engine on end, the engineer had to provide a special oil scavenging pump at the bottom. Franklin and Lycoming are said to be designing vertical engines especially for helicopters, to simplify the reduction gear problem.

In the PV-2, a universal joint in the drive shaft between the gear takeoff and the rotor hub, takes up the movement of the engine in its rubber mounting. A centrifugal cooling blower is mounted around the clutch assembly. Engineers say they believe it consumes about 5 percent of the power. They saw as a prospect of descending with slower cooling, since the helicopter consumes less power on considerable periods while standing still.

Crosses at 65 mph—This machine has a cruising speed of about 65 mph and a top speed of 90 to 100 mph, both of which the engineers expect to increase.

The company has another model on blueprint, with a payload of more than one ton (eight to ten passengers with baggage) and a range of 400 mi., ready for production at any time. Engineers believe this design has possibilities for military rescue work, liaison and other purposes. They have in mind, also, a two-place model, which would require a small addition of area to the rotor disc, and possibly some more power.

Rotor Blades—The PV-2 rotor blades have a chord of 9½ in. and an area of about 5 sq ft, which puts their loading at about 150 lb. to the square foot. This extremely high loading, compared with that of fixed wing planes, is made possible by the high speed of the blade, which is about 350 mph at a point near the tip. RPM of the rotor is 270. Spars are 1½-in. steel tubing with a slight taper.

New Research Group

Aviation Research Associates has been organized in New York to serve as a clearing house of aviation information and literature, and to provide counsel in all phases of aviation publication, advertising research and marketing.

Norman V. Carville, editor, author and authority on education and radio as executive editor and manager. Directors of the group are Casey Jones, Lt. Col. George Vaughn, research engineer, Richard Whitman, expert on training and meteorology; Lee Werreider, manufacturing and maintenance engineer; Rex Cleveland, industrial advertising manager

and aviation editorial writer of the New York Times, and Leslie Neville, editor of Aviation.

OWI Report Reviews Warplane Progress

Finds combat performance studies on American aircraft design.

The visit an force which the United States has built up is analyzed in a new Office of War Information report, which describes it as "powerful, balanced, adapted to the variety of strategic and tactical tasks imposed upon it."

Sharp criticism of some types which marked an earlier OWI report a year ago is missing in the new one and it is significant that there was little battle experience to draw upon at that time as compared with now.

Box Seats—The report lists an estimate box-seats of action in all theaters and concludes that "in spite of past mistakes made in our aircraft production, the evidence is conclusive that American planes today are superior to enemy planes in battle."

Recommends that, of course, the full story "a plane which destroys a strategic bridge, or a group of tanks, or a ship or an enemy industrial plant, adds testimony to the evidence of our aircraft performance which has box seats on its title."

The report says the famous P-48 "has reached the limit of its development possibilities, and after this time it will be developed only for operational training and replacement."

Merlin Mercedes—As regard to the Martin B-26 Marauder, the report says that "despite its high speed, good land capacity, and excellent combat performance in several theaters,



CONVICTS' EXTREMES:

Genius of warplanes from the four-engine Liberator to the L-8 Flying Jeep is turned out by Aviation Corp's nationwide aircraft company, Consolidated Vultee Aircraft Corp. The contrast of the smallest and largest products are shown here in this new photo.

ters, notably New Guinea, the Mediterranean and Europe, the production of this plane is being tapered off for strategic reasons.

Republic's P-47 Thunderbolt was said in the report to be "generally considered the world's best single-engine fighter for high-altitude operations."

New Avengers—New planes on the way which were mentioned included a new model of Bell's P-30 Avenger, with a low drag wing and a two-stage Allison supercharged engine, a new North American P-51 Mustang, highly supercharged, Packard-built, Bellco-Rope Merlin engine, the latest model of the Lockheed P-38 Lightning which has been given greatly increased horsepower in its Allison engine, improved production, and improved air-cooling for better high-altitude performance.

New models of the North American B-25 Mitchell have heavier armament and increased speed and range.

Four-Engine Bomber—The report mentions new four-engine bomber already in production and scheduled for combat by the spring of 1944, and says it will eventually replace the Boeing B-17 Flying Fortress, at least for long-range work.

ward determining how our productive economy, particularly in the aircraft industry, will emerge from the war.

Murray Asks Policy—Senator James E. Murray (D-Mont.) Chairman of the subcommittee called for the active assistance on industry, labor, and the executive departments of the government in helping to formulate a definite national policy—an action urged by several industry leaders in recent meetings in Washington and Colorado Springs.

Senator Murray explained that the major issue of his subcommittee were to obtain:

- 1—Speedy final settlement of terminated war contracts
- 2—Speedy temporary financing for manufacturers who need cash in advance of final settlement.
- 3—Uniformity of policy and procedure among the various government agencies
- 4—Statutory guarantees that the rights of smaller manufacturers will be protected.

Closed Session—The subcommittee met in closed session, preceding the public hearings, with representatives of the War Production Board, War and Navy Departments, Maritime Commission, Treasury Department, Smaller War Plants Corporation and the Departments of Justice, Labor and Commerce.

Testimony from individual businessmen was scheduled for the early sessions, with public testimony from Government agencies later.

Settlement—The War Department has proposed new legislation which would give the authority for settling cancelled war contracts in the interested agencies and provide for advance and part payments and continue the current system of guaranteed loans. At the same time, it was taken with the views of the Comptroller General that final settlement of terminated contracts should be handled by the general accounting office.



NEW AMERICAN'S "MUSTANG" CORRAL:

P-51 Mustang flight plans go through a briefing in period before being taken into the air. This picture takes place on the flight ramp at the Dallas division of North American Aviation, Inc., where uniforms are shown putting the flanking touches on the fighters. Powered by Rolls-Royce Merlin engines, these ships are rolling off the assembly lines at both the Texas and California divisions of American Aviation.

Box Score

OWI reports that from Dec. 3, 1941, to Sept. 1, 1943, American Army combat planes flew 235,738 sorties in which they dropped 168,000 tons of bombs. On these missions, our Army planes destroyed 5,313 enemy planes, probably destroyed 2,196 others and damaged 2,535 more. Their own loss was 1,187 planes.

For the six months ended Sept. 1, 1943, our planes destroyed 3,269 enemy planes, probably destroyed 1,502 others and damaged 1,860 more against a loss of 1,239 planes.

Policy on Contract Termination Looms

Expected to develop at hearings opened by Senate subcommittee.

Formulation of a national policy on contract termination was expected to develop from hearings opened by the subcommittee on contract termination of the Senate Military Affairs Committee.

It is generally expected that handling of contract termination legislation by Congress will have an important effect on war production and certainly will go a long way to-

New Plane Compass Developed by Bendix

Secret Gyro Flux Gate is product of seven years' development

A new type of compass which is gaining United Nations flyers unerringly in bombing objectives and home again has been developed by Bendix-Premier Division of Bendix Aviation Corp.

W. A. Reichel, director of engineering for the division of Philadelphia, said the compass—the Gyro Flux Gate—is as great an advance over the conventional magnetic compass as that compass was over the lodestone. "It explained that it uses the earth's magnetic field to develop magnetic electrical impulses which, when amplified, turn the compass indicator."

Unaffected by Bombardment—Because it is possible to locate the transmitter of this new compass at a distance from the indicating dial, Reichel said, it is possible to fix a position for it where it will not be affected by the bombardment, armor plate or other metal parts that impair the accuracy of the standard compass.

"Additional indicators are linked to the compass through the medium

of the Pioneer 'magnaplex' system. This system makes possible remote readings of air currents and measurements received from a remote source or master."

Seven Years' Study—The compass is the result of seven years' development by Bendix engineers and its existence, a secret secret for some time, was revealed in a description at Philadelphia after it was known that one or more of them have fallen into Axis hands.

Bendix officials said there was no possibility the enemy could catch up with us on it "because it will be impossible for them to duplicate the performance, much less put it into volume production."

Advantages—An advantage of the new compass, it was pointed out, is that no "conversion card" necessary with magnetic types, is needed because it gives fully corrected readings at all times. The possibility of the navigator making an error in the heat of battle is thus eliminated.

Evans Replaces Lanes

Brig. Gen. Frederick W. Evans replaces Col. Reed G. Lanes as commander of First Troop Cavalry Command of AAF Col. Lanes' new assignment has not been announced



Gyro Flux Gate Compass, Lt. T. A. Johnston, Livingston, Ala., demonstrates the operation of the new Bendix-developed model—said to be the second new compass to be perfected in 4,500 years—at the Philadelphia Division of Bendix Aviation Corp., where it is in production for the Army and Navy. Compass transmitter is shown at upper left, on the end of the plane, the amplifier on the center of the "tailcone." The master indicator is on the plane's nose and a secondary indicator on the wing at the left.

Continental Files For Route Extension

Seeks to operate two from Tulsa and one from Kansas City.

Continental Air Lines has filed application with the CAB for extension and consolidation of its present routes from its Memphis Terminal. It desires to operate two routes from Tulsa, Okla., and one route from Kansas City, thus joining present routes from Denver to these points.

Two other carriers filed for extended and new routes. Northwest Airlines wants to go into Rockford, Ill., Beloit, Wis., Dubuque, Iowa, and LaCrosse, Wis., an intermediate point on Route 3. Delta Air Corp. applied for extension of Route 24 from the intermediate point of Shreveport, La., to Kansas City, via Topeka and Fort Smith, Ark. Mustang and Tulsa, Okla., and Joplin, Mo.

Local Service—Five applications were filed for local service. Otto Aviation Corp., Newark, N. J., asked to operate five routes in New Jersey radiating from Newark to various towns and resorts such as Cape May, Lake Hopatcong, Atlantic City, Asbury Park. The company would transport persons, property and mail using twin-engine, six-eight passenger planes, some equipped with floats, called "state-liners."

Southair, Inc., Memphis, Tenn., operators of three primary training schools as civilian contractors at Pine Bluff and West Helena, Ark., and Clarksville, Miss., and of two army pre-flight schools in DeSoto County, Miss., and Akron, Ohio, filed application for 17 routes through 13 central states in an area extending roughly from New Orleans on the South, to Tennessee on the West, Fort, Mich., on the North and Charleston, S. C., on the Eastern boundary.

Heliropes Planned—Twelve scheduled routes to meet trunk airlines at Spokane and Seattle, Wash., and Portland, Ore., were asked by Pacific Northwest Airways of Portland. Intending to use helicopters, the applicant would run a virtual taxi feeder to the Trunk Lines, and operate within a 500-mile radius of Portland and Seattle.

White Circle Line, Inc., Thompsonville, Conn., applied for scheduled service from Northampton, Mass., to Winthrop Locks, Conn., and from Westfield to Palmer, Mass., via intermediate points, and also scheduled as well as charter service out of Springfield.

Spadework for Victory

Built today a spectacular military success is a story of vision and during this goes back to 1941. In the first high-velocity bomber ring from Arkansas comes the Reynolds plant. For that day of bright steel found a great new source of aluminum for America. A dense source, immune to the threat of U-boats, unswerving in quantity, demanding only the right kind of plant facilities to supply the largest and strongest air forces ever dreamed of.

Reynolds built this kind of plant. Completed in the world-record time of five months and every nine days, it is still the only plant in the country where bauxite comes in on one end and aluminum sheet rolls out the other. What is more, this plant was deliberately placed on proven bauxite, from good old American soil. This long before Pearl Harbor, may aptly be called Spadework for Victory."

But Reynolds does not stop upon just bauxite. Reynolds takes the lead in prefabricating airplane parts at the aluminum center. Reynolds metallurgists look ahead for new aluminum alloys that will give even greater striking power in Allied armadas. And Reynolds expand still, as the world's largest plant of aluminum foil, promises still further triumphs in the light-metal age of tomorrow.

The march is on... toward Leadership in Tomorrow.



Location for photograph of bauxite shipment from Reynolds in a mine

REYNOLDS ALUMINUM

OUT OF THE GROUND INTO THE SKY



REYNOLDS METALS COMPANY—CENTRAL OFFICE—BIRMINGHAM 14—30 PLANTS IN 10 STATES

AMERICA'S NEW SOURCE OF ALUMINUM

New Grumman Wage Plan Studied For Key to Manpower Problem

Aircraft industry watches test of incentive pay program approved by War Labor Board.

The aircraft industry will have an opportunity to observe the workings of a plant-wide type of incentive-pay system at Grumman Aircraft, whose plan has been approved by the War Labor Board as an experiment.

Dr. George W. Taylor, vice-chairman of the board, said the phorone plan looks like a natural in these times but cautioned that "it has great dangers." He pointed out that changes in design and production methods could upset any incentive plan, causing difficulties which might interfere with production.

Labov's Stand Unruffled—C. J. Shipley, labor member representing the CIO, and labor members went along with the Grumman plan because no union had representation at the plant. Labor generally has created plant-wide plans.

Incentive payment plans were discussed at a recent meeting in Washington of the National Aircraft War Production Council of which Grumman is not a member. Council members agreed that the complexities of producing airplanes of consistently changing design made it difficult to arrive at standards applicable throughout the industry and left the question for company decision.

Employees Show Gains—Under the Grossman plan, which is an adaptation of the Bench Efficiency Incentive plan now operating successfully at Bench Aircraft, workers will receive a 1 percent wage increase for each 2 percent increase in production with all employees sharing in the increase. An output of 40 lb of airplane weight per man-hour actually worked is the base for calculating increased production.

Dr. Taylor warned that adoption of incentive payment plans was not a panacea for production problems, but said there were prospects of a 10 to 15 percent increase in over-all production at the Gramman plant, where production already is good.

Gramman Plan Modified—In the Gramman case, the board approved the company's output incentive plan, but with these modifications:

* The standard information obtained from the tests for computing production increases are available in various pay package sheets by USWA of ALBERTA's provincial union members.

[illegible]

• If livestock supplements shall be applied 14 days prior to either of these 2 critical windows in the livestock period as provided in the 100000 application of the cow.

Fig. 4. An increase of W_2 could not, however, be entered in the same way as each component shifted its pathlength in the opposite way in order to compensate the disturbance of the equilibrium state. Further analysis was in effect.

3. The limitation upon and the due to the above provisions shall be made of December 31, 1954.

4. When a new GDS is to be reported in the future quarterly on completion of the 1955-56 season, changes which may occur in production and any other developments which may affect the availability of the statistics proposed in the annex shall be taken into account. The production data is subject to modification by the NRI in case of any significant change in the situation.

The board said it would consider only plans approved by management and taken and would not order an incentive wage program in a dispute case. In addition, the board said incentive plans must conform to the

Contract Increase—An increase in contract amounting to about \$328,000 with Defense Plant Corp. was granted to Rohr Aircraft Corp., Chula Vista, Cal., for additional facilities at a California plant, raising the total contract to approximately \$3,240,900. Title remains with DPC.

New Devices Give U.S. Planes Best Armament

Machine guns, cannon, power turrets, fire control devices described by AAE Material Control

Engineers in the Armament Laboratory, at the AAF Materiel Command, report new developments in aircraft armament, for both defensive and offensive use, being applied to our fighting planes, are making them the most formidable aircraft in the skies today.

Specific new advancements include:

- 1. Development and improvement of the high cycle rate small caliber machine guns, the most important of which is the 50 caliber gun and assault weapon.

• **3 New electric and hydraulically controlled fire control systems remotely controlled and locally operated multiple machine gun barrels fire controlling devices such as the so-called computer matrix new re-**

responsible for so many energy accidents.

► 3. Practical application of new and existing bomb sights and allied equipment

9-4 The 20-mm, 37-mm and larger caliber aircraft cannon

† 3 Bomb racks, shackles, release mechanism, etc.

One armament expert said the 40-lb. 59-caliber gun "is beyond question the finest gun of its kind in the world. It fires 850 shots a minute. Relatively small, it fits easily into present-day aircraft. The projectile, leaving the muzzle at a speed of over 3,000 ft. a second, penetrates all parts of an airplane, including the engine.

Developments of remotely controlled turnerts, the experts said, "have progressed to the point where some turnerts and their control mechanisms equal those in a large modern battleship in efficiency operation."

Power-Driven Turrets—Contrary to general belief that the British were the first to adopt turrets on bombers, technicians at Wright Field point out that original plans for our large planes called for installation of power-driven turrets and that now there are airplanes in combat equipped with multiple gun turrets that protect every inch of the plane from attack.

Bill Seeks To Admit WASPS to AAF

Coastal sales women who put
may be given same status as men

A bill to provide for acceptance of women pilots in the Army Air Forces has been introduced by Rep. John M. Costello (D-Calif.). The bill would give the Women's Airforce Service pilots standing in the Army as regular AAF pilots.

Some 330 WASPS have completed training and about 500 are constantly in training at the Sweetwater, Tex., base. At present from 50 to 100 a month are being graduated after completing the identical training given men pilots with the excep-

► **Number Left to Army**—Recruitment for the program has ceased, however, Castillo's bill leaves the number and modifications to the

discretion of the AAF's commanding general. It has been announced that experiments are being made to use the women pilots further. The age limit has been lowered from 31 years to 18 years, and six months

Working for DEAR LIFE



Brrrrrr... brrrrrr... brrrrrr...
Brrrrrr... tap... tap... tap...
Minute after minute... hour
after hour... day after day...
...this fantastic machine
chirps goes on, down the long
lines of income operators in the
Swedish parachute factories.
+ + + Saving for dear life, it
is said, that the previous lives of
these few, to whom so many owe
so much, shall have that vital
protection against the boards of
warfare! + + + Then the genius
of Swedish engineers,
Swedish methods of production
have been developed that are
daily establishing records in
making more planes and faster
deliveries for protecting those
free who are speeding up our
way to Victory.*



SWITLIK PARACHUTE COMPANY
Troy, New Jersey

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Hundreds of aviation experts on our staff are becoming seasoned veterans in their highly specialized jobs, as Georgia Air Service, Inc., continues to concentrate on Primary Training for Army Air Forces pilots. Without loss of a moment's time from today's job... we are facing toward tomorrow... ready to convert the knowledge and skill of this organization to the flying needs of a progressive nation... in peace.

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THE AIR WAR

COMMENTARY

Rise in Nazi Air Strength in West Due to Removal from Russian Front

Luftwaffe not getting stronger, despite reports of increased power; Germans follow strategy that led to defeat in Africa.

What is the lead-down on the Luftwaffe—is it getting stronger?

In the several weeks, the answer to this vital question is No. Certainly on the Russian front the Luftwaffe has been seriously weakened. It is more than doubtful if it will ever regain air superiority over the air and coming Red Air Force strongly supported in fighters and light bombers by high priority American production.

The two Luftflotten (Air Fleets 1 and 4) on the long eastern front have been broken up, and each Army has been alerted a number of fighter and bomber units for local co-operative service only. (The early campaigns in North Africa demonstrated once and for all that this is not the way to use air power, and the Nazis know it, but there is nothing they can do about it.) By this reorganization, however, seasoned pilots staff officers and additional fighter planes have become available for new defense units in western Germany.

Heavy Toll Taken.—Also in the Mediterranean the savage punishment meted out to the Luftwaffe by General Spaatz, whose heavy bomb strength has recently been increased by Liberators from the Eighth Air Force in England and the Ninth Air Force in the Middle East, has resulted in a heavy toll of Nazi planes, both in the air and on the ground.

Thus, only in the west has there been an increase of Nazi air strength. By drawing from other fronts, the defense has become more formidable. Desperate methods are being used to stave off the big night attacks of RAF's Bomber Command, such as brilliant, slow-falling flares, more intense anti-aircraft barrage, electronic aircraft detection devices, and the use of improved two-engine night fighter versions of the Ju-88 (very fast), Bessler 217 and Me-210.

Resistance.—Similarly the hard-hitting daylight missions of the Eighth Air Force are being met by savage resistance on the part of pilots in new heavily armed versions of the single-engine day fighters, and by the most devastating flak which can be imagined.

The fighters carry 21-mm and 40-mm cannons, and include the 410, an improved 218 reported as equipped with two Daimler-Benz 600 engines of 1,990-hp in place of the 1,335-hp 601's.

Air bombing, highly explosive rocket shells and severely burning incendiaries are among the new devices employed to choke off these big daylight missions whose increasingly deep penetrations into industrial Germany are hitting where it hurts. In some ways it is the Battle of Britain in reverse.

Widened Front.—Many air leaders regard this as the beginning of

the watershed fresh, the final showdown in the skies that has to come before an invasion is feasible. It may take a considerable period to work its way out, but experts agree that from the time General Saker's Forerunner and Thundersbolts began knocking out the Luftwaffe's day fighters to the tune of several hundred a month and demonstrated that they could get through to the most heavily defended targets without prohibitive losses, the trend was definitely set.

In the meantime, however, over the western front the Luftwaffe in some ways does appear stronger than last spring, but this does not mean the Allies have lost control of the air, as has been recently reported by some observers. First line operational planes total around 4,899 as against 3,000 then with a grand total of some 10,000 aircraft. Monthly production six months ago was estimated at about 1,000 planes of all types, now it is reported by reliable sources as over 2,900 a month.

Swing to Fighters.—The swing to defensive fighters has been very sharp, single-engine day fighter production being almost double that of late winter and two-engine night fighters up at least 50 percent. Some important fighter plane factories have been heavily damaged, including Regensburg and two others on the Weser. Meanwhile, two main sources of Me-109's. This may show up in current production estimates not as yet, as these two factories stop-



8TH GENERATION "FORTRESS"

Deploying a new "chin turret," the new Boeing B-17 Flying Fortress is shown as the line before being painted in war colors. The new chin turret, crissed by two 58-caliber machine guns, is operated by remote control from the bombardier's place in the nose.

pled 900 of these fighters per month. Focke-Wulf 109 factories are more scattered, turning out smaller quantities per unit, but some have been severely damaged also, notably Kassel and Osnabrücken.

Bomber Output OE—As fighter production goes up, bomber production goes down. The Luftwaffe has lost its offensive punch. For morale purposes an occasional raid on England has to be carried out, such as the one against London on the night of Oct. 7. It is doubtful if bomber production is more than 10 percent of the current total, with say 20 percent more for transports and trainers, leaving 60 percent for day and night fighters. This high percentage for fighters is well earned and that for bombers decreasing.

There is evidence that fighters are sent straight into combat, and not into a reserve pool as in the good old days, but there is no reason to discount the possibility of a substantial bomber reserve which the Luftwaffe may be holding back against an invasion attempt or for other purposes.

Host Protection—A recent use for long range fighters involves a further strike on Nazi air strength. They are being employed on the anti-submarine warfare, which is still Germany's main hope of prolonging the war into a stalemate, plus the hope of making our bomber attacks so costly they will be given up or induced despite added de-



BRITISH GLIDER GIANT IN TOW

This new photo, released by British Information services, shows Britain's Bucentaur glider in tow. Note double line rope at nose. Technical experts say gliders in their present state of production development will not be commercially feasible after the war. Clonier aerodynamic design, however, is foremost in the post-war era.

ceptive power on the U-boats themselves, the Allied anti-submarine campaign by air has been so successful that during the summer some 50 percent of the subs which were sunk were destroyed by air power, including six out of seven during one period in the Bay of Biscay. Ju-88's have been forced into the picture to crew long range fighter protection in the packs of U-boats as they approach and leave the French ports (The 4-engine Focke-Wulf 384's. Known as the "K" for patrol, but too vulnerable for this other job).

According to British authorities, the RAF Coastal Command has

countered this by sending fast long range Mosquito fighters to tangle with the Ju-44's while their big Wellingtons and Handleys, Liberators and Catalinas keep after the submarines. The Nazis have been forced to another uneconomic decision to match this new threat. Taking some of their precious FW-190's, desperately needed to help stem the increasingly heavy American daylight attacks on key industrial targets they have fitted them with long-range fuel tanks and sent them out to tackle the Mosquitoes. Seemingly like the house that Jack built, Liberators and other subs, Ju-88's and other Liberators, Mosquitos out after Ju-88's, K and Focke-Wulf 109's out after Mosquitos. And so it goes. In one way or another, and in some extent in all ways at once, the air trend is advancing.

WAVES Check Planes

900 working on fighters, bombers and patrol planes for Navy.

More than 900 WAVE aviation metallurgy units are on duty in the country, tuning up the motors on fighters, checking the fuel system on bombers and the big patrol planes, or overhauling training planes, according to a Navy announcement.

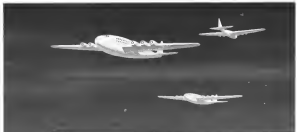
Included in this group are about 50 aviation metallurgy doing high caliber instrument repair work.

Four Plane Captains—At the Jacksonville, Fla., Naval Air Station four women have the job of plane captain, which entails their preparing the plane for flight, filling out the yellow preflight sheet kept daily, and warming up the ship. When the flyer returns, the captain again checks the ship and secures it for the night.



LAST MINUTE INSPECTION BEFORE RAID:

This striking British official photo, just released, shows RAF mechanics putting moters of a Stirling bomber just before departure on a main bombing raid. The test is carried out by the British in this way, while the engine is turning over. The strange vibration effect of the propellers was obtained by using a slow shutter speed on the camera.



Crossroads of the world



When Lieut. Commander Richard E. Byrd made his memorable round-trip flight with Pilot Floyd Beaman from Spangdahen to the North Pole in 1926, his multimotored Fokker plane carried a shortwave transmitter designed by Ralph M. Heintz, co-founder of Heintz and Kaufman, Ltd.

Two years later Sir George Hubert Wilkins flew a similar transmitter over the Pole while determining the feasibility of planes at polar latitudes. Taking off from Ft. Barrow, Sir Hubert crossed the top of the world in a successful 2100-mile flight to Dead Man's Island.

The freedom of these scientific pioneers are becoming a reality as Great Circle routes to distant overseas lead our bombers and transports over Arctic regions. Today an air-minded generation

speaks of the North Pole as "the crossroads of the world."

The polar flights of Byrd and Wilkins are part of the heritage of Heintz and Kaufman, Ltd., and are reflected in the many types of Gammatron tubes our engineers have designed especially for aviation transmitters.

In the Heintz and Kaufman plant and in our laboratories, Gammatrons are being ceaselessly perfected to safeguard planes and their crews as they soar over the top of the world.

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Gammatron Tubes



WE 312—Highly popular Gammatron design, made with testable elements. It has high voltage and power capabilities, maintains nondestructive high frequency, and repairs in very low driving current and voltage requirements. Plate diameter, 7/16 inch, power output, 225 watts.



Plant Without War Orders Profits By Research on Post War Models

California Aero Glider Co. develops variety of ground trainers designed to meet private and commercial demand at war's end.

By SCHOLIER BANGS

Small aircraft factories unable to obtain warlike war contracts may find in the example of a West Coast "little business" the key to post-war survival.

California Aero Glider Co., Los Angeles, stakes its claim to a future on a principle.

Organized in May, 1942, to capture an Army contract for training gliders, Aero Glider brought together as president and vice-president two Los Angeles business men, A. V. Marchetti and Ray J. Parady, and as chief engineer Volmer Jensen, successful western airplane designer.

Two Models Ready—Two prototype models, J-10 and J-11, two-place, high performance designs, were in the air and ready for production by September, when the Army gave out toward new orders for such trainers.

In Washington last November, Parady and Jensen learned from the late Maj. Loren Barninger, chief of the AAF glider unit, that they could not be awarded a contract. But Barninger asked them "Could you build a safe sort of a pre-flight trainer?"

Built in Two Weeks—In two weeks, at Los Angeles, C.A.G. de-

signed and built as the J-12 a control-control, non-flying trainer with a wing movement made possible by free balance on its landing gear assembly. J-12 was to be towed—behind Army jeeps, the company hoped.

Maj. Barninger's death in January left the company again in possession of a project with no sponsor.

From its "idea" stockpile the company immediately blueprinted the J-12 design, the preparation of a construction and flight manual, and the sale of blueprints and manuals to public school systems in 20 aviation-minded states throughout the nation.

Future Business—C.A.G. then turned its attention toward fleshing its depleted "future business" stockpile. Engineering of a 20-place military glider, J-13, was begun. A two-place utility glider, J-14, designed for slow landing speed and student safety, was flown and shelved as a post-war project. Likewise a single-place convertible primary or secondary glider, J-15.

By installing a 1 hp engine and small propeller in the nose of a streamlined J-12 last May, the company's advanced pre-flight trainer, J-16, was evolved. Its controls se-

simulate at 5 mph, it attains a top speed of 40 mph, and has won an Army experimental order for five units.

Studied By Allies—Currently, the J-16 is being considered for adoption by two other allied nations.

Pending reaction to its J-16, C.A.G. blanches a unique classroom trainer for public school use, the J-17. Powered by a 1 1/2-hp electric motor and propeller, it rotates and balances on a pivot with an accurate simulation of flight control. Tests have shown that youths of early high school age can master the trainer with little difficulty.

During a second financial breathing spell developing through production of the J-16 and J-17, the company will complete engineering of a post-war feeder trainer design expected to carry a three-ton load under the power of two burned-in wing 300-hp engines.

Motored Sailplane—Also due to go into the "future" shelf is a motored sportsman's sailplane that will take off, with an 8- to 18-hp engine mounted above the wing, as an airplane. When the pilot reaches



Classroom Trainer Volmer Jensen, chief engineer of California Aero Glider Co., explains operation of company's classroom trainer. (Left shown are the trainer's instrument hood and microphone remote instruction equipment.)



Parady, vice-president, is in cockpit. On right is an unpowered advanced pre-flight trainer which aroused the Army's interest and won an experimental contract. Controls are sensitive at 5 mph. Top speed is 40 mph.



AMERICAN INGENUITY IN THE PACIFIC:

Officers and officials returning from the war zones are greeting the American mechanics' ingenuity in cannibalizing, overhauling and repairing warplanes under primitive conditions. This new Marine Corps photo shows a team made from native men to enable instructors to live up the night on this P-40 Corsair "somewhere in the Pacific."

his soaring objective the engine will be stopped and the entire engine and propeller assembly will be cranked down into a hangage well. A hand-operated starter allows resumption of motored flight at will.

Truman Group Probes North American Plant

Wellgren leads firm's contribution to war effort but admits charges of inefficiency in Dallas unit.

A subcommittee of the Truman investigating committee will conduct an inquiry into charges of in-

efficiency at North American Aviation plant at Dallas.

Firm's Products Praised—Senator Mon C. Wellgren, of Washington, chairman of the subcommittee, emphasized the investigation has nothing to do with the quality of North American products and he lauded the company's contribution to the war effort.

At the same time, he said complaints concerning the plant's operation had been received by the Truman Committee and that others had been referred to the committee from other sources.

Subcontracting Helps British Spread Plants

19 firms with 45 production units in 1938 now manage 328 factories.

Wide dispersal of British aircraft factories, as production assistant chairman that master works must exist on a key plant, is emphasized by the fact that 19 aircraft firms which managed 45 production units in 1938, were managing 328 units in 1943.

One large group, which contributed 68 units to the total, also controlled 89 smaller units. Stores and administrative design and development departments are similarly dispersed.

Subcontracting—Some 43 percent of aircraft construction and assembly work in Britain is subcontracted. For a time, the firms relied almost

BRIEFING

► Navy's new torpedo plane, the Sea Wolf, is a product of the engineering staff which developed the Navy's Corsair at Chance Vought Aircraft Division of United Aircraft. The prototype was built as the XTBT-1 at Chance Vought. It will be manufactured in quantity by Consolidated Vultee at Alhambra.

► The invasion of Italy "would have been easier with more planes—it could not have been done with less," Gen. H. H. Arnold said in Seattle. He said that one day last week there were 1,000 planes flying from the U.S. to overseas points, but that greater replacements are necessary.

► U.S. 8th air force has increased 480 percent since May 1 and has four times as many heavy bombers as last spring, six times as many fighters. Four times the radio operators, and more expansion is underway.

► Continental Aviation & Engineering Corp. will build the Holly-Heron high-speed, aircraft engine at its new upstate Michigan plant, manufacturer of the Pratt & Whitney engine transferred to Continental's plant at Hamilton, Wis. The Holly-Heron prototype has been built in the U.S. by Packard exclusively.

► Aircraft industry will be among the first five in America after the war, says A. W. Zeleny of International Statistical Bureau, Inc., although it did not rank among the top 40 until war's work. Production of the industry when the war ends, are so apparent there is tendency to be blinded to great, more distant possibilities, he said.

► Henry J. Kaiser becomes president and oversees active management of Brewster Aircraft Co. of Providence, R.I. Kaiser, Jr., returns as president and director, accepting Navy assignment. At previously declined by Avianco, Inc., the Navy took over company control just prior to Kaiser's election as president.

► Several small fleets of bombers which had returned from war zones and were tearing the nation with their crews as morale builders, were ordered to disband their schedules recently, on AAF order, and other planned exercises were not begun.

► National Aircraft Standards Committee will convene at Lexington, Mass., New York City, Nov. 6-12, with principal members of Army-Navy Aeronautical Board, AACC, and other engineering societies at work on the standard standards program. Members of NARC are representatives of 20 airplane prime contractors.



California Aero Glider Co.'s Trainers This small, progressive company designed these two pre-flight trainers, which promised bankruptcy. On left is an unpowered trainer designed and built in two weeks. Ray J.



275-LB. TEST EACH BLADE:

Testing hydraulic pressure of the pitch-changing mechanism on three-bladed propeller at the plant of Aeroquipments Division of General Motors Corp., near Dayton. A turbine is shown putting the prop through a complete pitch change with each thin blade carrying a load of 275-lb.

(Continued from page 11) entirely on their own resources for federal subsidy, but this work is now handled by the Ministry of Aircraft Production through its regional offices.

Relative positions of Britain and Germany, however, have now changed and the tenth report of the Select Committee on National Expenditures says "the time has now come to consider the concentration of (aircraft production) capacity in fewer units."

► **Expenses Limit Near**—The report also points out that, since the launch

of expansion of the labor force are approaching, increases in output must be sought mainly through greater all-around efficiency in which there is a parallel with aircraft production in the United States.

The main aircraft industry in Britain, so distinct from smallness, consists of a number of firms differing widely in character, organization and experience. The task of welding this heterogeneous collection of units into a single, efficient industry has been generally solved by making professional firms into joint ventures so to speak responsible for

design and development and by grouping non-professional firms around them as offering units. The British have found it necessary to take control of some of the less efficient firms, or to strengthen the management from the outside. Other cases have been dealt with simply by appointment of a production efficiency board.

Aircraft Unions Balk At Incentive Payments

Industry-wide program believed doomed to failure as result of CIO-AFL opposition.

Any plans for the introduction of incentive payment programs in the aircraft industry generally seem to be pretty well doomed as the result of the expressed attitude of the CIO and AFL.

Charles E. Wilson, WPA executive vice-chairman, has long advocated incentive wage plans for the aircraft industry as a means of increasing production, but he has been able to make little if any headway with both labor and management showing little interest.

► **Further Study**—Members of the National Aircraft War Production Council discussed the matter at their recent Washington meeting and asked the council staff to give the question further study. The matter of adoption of such plans was left to the individual companies, and recent statements by labor leaders indicate that any extension of incentive payment programs will come, if at all, in a few plants which do not employ organized labor.

More Gliders

Construction of thousands more 18-piece Waco gliders will continue through 1943 and will rise 1944, with at least two private contractors participating in the continuation of the program. The new program already totals more than 360,000,000.

Although several new type gliders are in various stages of design and test, it will be the Waco CG-4A which will launch the country's airborne armies over future invasion areas, Washington officials say.

Ford Motor Co.'s true Mounting, Mfg., glider plant probably will remain the country's largest manufacturer.



CHEVROLET PLANT TURNS OUT PROPELLERS:

First picture released of one of the four giant aluminum forge plants in General Motors Chevrolet system, plants whose combined output of aluminum aircraft forgings is estimated record proportions. Propeller blades are forced in this converted automobile plant from aluminum bar stock on giant forging machines.

Beechcrafts at work

THIS IS ONE OF A SERIES

In the three specialized types of Beechcrafts shown in formation below, a large proportion of Air Forces bomber crews gain the skills that serve them so well in their flights over Axis targets. * Pilots learn the technique of handling heavy, fast, multi-engine bombers in the plywood AT-10 Beechcraft transitional trainer (leading formation). * Navigators master their complex art in the all-metal AT-7 (Navy SBN-3) Beechcraft navigation trainer (second in formation). * Bombardiers learn to make the most of those crucial split seconds over the target in the all-metal AT-11 (Navy SBN-1) Beechcraft bombing trainer (third in formation) which is also adaptable for instruction in flexible aerial gunnery. * Like the commercial Beechcrafts which were prototypes of the AT-7 and AT-11, these trainers combine near-testical high cruising speeds with exceptionally low landing speeds, easy maneuverability, and great sturdiness. * Like the men they help to instruct, these Beechcrafts work hard and efficiently at their vital tasks with the world's finest Air Services.



Beech Aircraft



CORPORATION

BEECHCRAFTS ARE DOING THEIR PART WICHITA, KANSAS, U.S.A.

While an incentive pay system devised by Grumman was approved by the War Labor Board, it should be noted that labor representatives on the board did not oppose the proposition because there is no union representation at Grumman. They did not voice their opposition to incentive programs in general. The board, in approving the Grumman plan, emphasized that the action was not to be taken as precedent and that they would not approve any such plan which was not submitted to them jointly by management and labor.

Opposed by UAW—Wilson has been advocating a plan calling for payment on a plant-wide basis with a percentage increase in pay for each percentage increase in production.

ICAO Emphatic—The ICAO United Automobile Workers took an emphatic stand against incentive wages at their recent Buffalo convention and took in the document ICAO union is the aircraft industry. William Green, AFL president also indicated the opposition of his group in a recent editorial in the official AFL magazine.

NATA Discusses Parts and Supplies

Commerce also is to be topic at annual convention in St. Louis Dec. 2-4.

Board members and other officials of the National Aviation Trades Association held meetings Oct. 31 and 12 in Washington to establish policy on acquisition of parts and

supplies and on future contracts which will be the main topics of the annual convention of NATA planned for Dec. 2-4 in St. Louis. The meetings were closed and little is known of the discussions pending the convention.

Plans were made to ask Assistant Secretary of Commerce for Air, W. A. M. Burden, and a representative of the light plane manufacturers to speak to the group at the convention.

CAA-WTS Participation—At the board meeting, plans for participation of CAA-WTS in the program were discussed.

Members of the board present, all light school operators, were Leslie M. Bowman of Port Worth, president of the board and Navy school operator, William A. Ong of Kansas City, Mo., operator of three multi-vocational schools and chairman of the board, Col. Florence Turner, Indianapolis school operator, W. M. Post, Jr., of Allentown, Pa., Norman Paulin of Yakima, Wash., and John H. Wilson of Lockport, Ill., executive director.

NATA officials in Washington for the meetings include: C. B. Mooney of Parks Air College, East St. Louis, chairman of the legislative group, Gene Hicks of Corcoran Airline, St. Louis, president of the seventh region, Stanley J. France Chattanooga, Tenn., president of the second region, and E. W. Watkins, Providence, R. I., member of the executive committee.

Fairchild Wins Award

Fairchild Aircraft Division, Hagerstown, Md., has received a star

award, signifying renewal of the Army-Navy "E" Production Award for an additional six months and is the since then the Treasury Department's Minute Man Award and the privilege of flying the minute man flag, showing more than 90 percent of the employees participating in the regular War Bond payroll deduction plan.

Grace's EAL Holdings

Testimony that W. R. Grace & Co. has become a large stockholder in Eastern Air Lines was given recently at a Civil Aeronautics Board hearing in New York on the question of a United States terminal at Panagora.

The statement that Grace, already half-owner of Panagora, is Eastern's second or third largest stockholder was made by Adolph Garm, Grace Co. vice-president, on cross examination by counsel for Pan American Airways, who owns the other half of Panagora.



HOLLOW STEEL PROPS

First picture of American Propeller Corp. blades, forged from stainless steel tubing, being installed on a Martin Marsauder B-26 medium bomber. These propellers also have been manufactured for use on Bell P-39 Airacobra and Republic P-47 Thunderbolt fighters. American Propeller developed the process of forging "proper" from seamless tubing in order to reduce the amount of welding required, which in these blades is only at the tip and for a short distance along the leading edge where the airfoils are low.

Tel-Air



example

This wrench required accurate machining to aircraft specifications.

a tel-air part because

tolerance required was close. Finish had to be smooth. Prompt delivery was essential and contract was completed ahead of schedule.

example



With thread diameter in excess of 1" and a No. 3 fit required, this aircraft overhaul tool was machined from a tough steel forging.

a tel-air part because

Finish had to be such that there was no chance of maring the part to which it was attached. Delivery was urgent and made promptly. Tolerances were close.

example



This piston, although not an aircraft part, had to be made as accurately as any used in aircraft.

a tel-air part because

It had to have a very smooth finish, close tolerance with no taper—a rush job, delivered on time.

You can receive the benefits of Tel-Air workmanship by having Tel-Air do your work. Send your blueprints today.

the teleoptic company

racine, wisconsin

manufactures for 25 years



THEY DEBATE HYDRAULIC VS. ELECTRIC CONTROLS

These delegates to the recent R&E meeting in Los Angeles participated in a forum on the merits and disadvantages of aircraft controls, hydraulics and electronics. Left to right are: Col. G. C. Cross, of Wright Field, Gunner School, senior chairman, vice-president of Komer Motors; Walter C. Trowman, chief engineer of Bendix Aviation, Ltd.; A. E. Hildebrand, chief engineer of Aircraft Accessories Corp.; Ralph L. Rimmer, chief engineer of TWA; and Dr. A. L. Kline, associate professor of airplane design, California Institute of Technology, and consulting engineer of Douglas Aircraft

PERSONNEL

Gilbert H. Scribner, Chicago businessman, has been elected to the board of directors of TWA, following the company's decision to increase its stock of domestic lines to 10 percent. Mr. Scribner is a trustee of Mutual Life Insurance Co. of New York and of Northwestern University, director of American Farmers' Mut. Building Corp., National Railroad Bank of Chicago, and of Abernethy & Pich of New York. He is a director of American Red Cross, Chicago chapter, and is on the Chicago executive committee.

"Instructor of Stewardesses" is the new title of Helen Thorne, stewardess with United Air Lines since 1936. Flying Chicago-New York route, she will have full charge of training future stewardesses. For the airlines in their three-week course preparatory to flight duty.

Trans-Canada Airlines announces appointment of J. H. Voth as executive assistant. Voth has been assigned to direct for more than 20 yrs with civil aviation development in Canada and is a former member of the ICAF.

E. B. Anderson is now district manager, manufacturing division of American Machine & Tool Corp., North Hollywood, Calif., according to a recent announcement by the company which operates a plant in Glendale, Calif., for airplane parts and supplies and Pacific Aeronautics in Burbank and Oakland.

Major R. E. Kline, USMC, head of the Flight Training Section (DNG) (Av), was recently promoted to lieutenant colonel. Promotions from lieutenant colonel to commander in the office of the Deputy Chief of Naval Operations (Av) was recently made to Robert J. C. Mohr, Robert G. Goetz, Jack W. Thornburg and DeWitt W. Blumery.

In the office of the Chief of Bureau of Aeronautics, Michael G. O'Connor, Sheldon W. Reese, James W. Thomas and Paul J. Hart were promoted from lieutenant colonel to commander.

R. S. Moser has been named assistant to El B. Belandier, Jr., general counsel of Chicago and Southern Air Lines. He has served two years as general counsel of California Centuries Line.

Leonard L. Shaw has been made manager of the airport division of United Aircraft Corp., Springfield, Mass. succeeding Bernard L. Whelan, new general manager of Sikorsky Aircraft Corp. Since 1938 Shaw has been Washington representative of Pratt & Whitney aircraft division of United Aircraft.

Before that he was an installation engineer with Pratt & Whitney and previously had operated an airport in California. He is a veteran pilot receiving his first flight instruction from Arthur Hoyer in 1915, and received his wings as flying officer in the World War and later in various posts in the country and at Lake Pearl, Pearl Harbor. He resigned as a captain in 1928 to enter the aircraft business.

John J. Bunkley has been appointed production manager of the Midland Hydraulic Engineering Co., producing hydraulic equipment for aircraft. Bunkley has been on the staff of Anderson-McIntyre Associates, consulting engineers at Curtiss-Wright's Columbus, Ohio plant.

Pennington - Central Airlines changes Robert M. Bagshaw to district manager in Grand Rapids, Mich., has been transferred to Chicago. James K. Belmont, district manager in Baltimore, is now in Washington as assistant district traffic manager.

John Van Loo, traffic representative in Detroit, has been promoted to succeed Bagshaw. Frank Morris, recently supervisor of the Chicago Airlines Ticket Office, has been made reservations manager of the new Chicago ticket office.



Belandier Moser Bagshaw



Circle Morgan McGrath

Shifting of experienced personnel has been announced by TWA. William R. McGrath, New York Eastern region traffic manager, has been promoted to Eastern traffic representative with headquarters in Kansas City. Walter W. Gayle, formerly district traffic manager at Philadelphia, has been promoted to the membership of the new Midwest region in Kansas City. L. B. Swagan has been advanced from district traffic manager at New York to Eastern region manager. A. E. Hawthorne, district traffic manager at Los Angeles, an assistant Eastern region traffic manager at Pittsburgh, Pa. Ralph L. Bunker, formerly manager of aviation materials of Los Angeles, a district manager in that city. A. D. Williams, traffic representative in New York, takes over Swagan's post as district traffic manager. E. W. Kew, Philadelphia traffic manager, is now district manager. J. G. Henrich, traffic training supervisor in Kansas City, is assistant Central region manager. C. W. McMillan, Chicago, is manager of the Central region. John W. Balke, district traffic manager at Chicago, and Howard Goodrich, district traffic manager at Indianapolis, are now in supervisory positions on the training staff in Kansas City. John Martin, traffic representative in New York, is now district manager in Chicago. J. B. Dyer, traffic representative at Indianapolis is now district traffic manager.

Other advancements include L. E. Hainsworth, district traffic dispatcher at Kansas City to reservations supervisor, and R. E. Shaw, district traffic dispatcher at New York to chief traffic dispatcher in Kansas City.

Barred L. Whelan has been elected general manager of Sikorsky Aircraft division of United Aircraft Corp. to succeed A. Reed Miller. Mr. Whelan has been with United Aircraft for 13 yrs, starting as a test pilot, but later became general manager of United Aircraft division.

Philip C. Gassen, formerly managing director of the de Havilland Aircraft of Canada Ltd., has been made a director of the English parent company.

J. Howard Foster is new mechanical and production superintendent for the military modification project operated at St. Paul airport. R. B. Kennel has been named assistant superintendent in charge of production. H. R. Cleveland becomes assistant superintendent in charge of administration, and W. W. Corde has been named assistant superintendent in charge of production planning.

Ernest C. Meikle is Washington supervisor of aircraft, an engineer and draftsman. After working in the Air Corps, he has been appointed. Previously Meikle represented the American Airplane Co. in Los Angeles as an agent and an express representative. He has been with the firm for five years.

United Air Lines has appointed T. C. Douglas as assistant general purchasing agent at Chicago general headquarters. He succeeds James Almond now on leave of absence as an agent in the Navy. Douglas has been with United for ten years.

Robert McVeeney, test pilot for the Grumman Aircraft Engineering Corp. was killed Oct. 6 in a crash-landing of the new Navy Helix fighter plane. He had been with Grumman for several years and was considered by company as one of the best test pilots in the country.

Jack Meek has been appointed press representative, Western Lines, Canadian Pacific Air Lines. His headquarters will be Edmonton. Meek was financial officer of The Vancouver Sun before joining CPA.

John Wrenthall, liaison representative with the North Atlantic Wing of the ATC, has been named chief of dispatchers of Transcontinental & Western Air's International division. He was formerly district traffic manager for TWA in Albuquerque, and with the company in various capacities in Los Angeles, Kansas City and Columbus, Ohio. He will continue to have responsibility while taking on his new responsibilities.

Arthur J. Delaney, formerly group engineer in charge of hydraulic design and installation at the Mars for Glass & Martin Co., has been appointed hydraulic design supervisor of Northwest Aeronautics, Minneapolis.

James P. Smart, transportation supervisor for TWA in Kansas City, has been promoted to district traffic manager at Phoenix.

Clifford M. Galles has been appointed assistant chief engineer of Kansas Motors, Inc. For the past year he has been project engineer in charge of design and development of Kansas's first engine.

Leon S. Allen with Pan American for the past ten years, has joined American Airlines as special representative in the Los Angeles airport department. He was previously with C. Olin in Shipbuilding Lines.

William A. Seale has been appointed assistant chief engineer of Sales Division of the Aero Equipment Corporation, Bryan, Ohio, under the supervision of R. E. Somerville, division manager according to an announcement by R. W. Harman, manager of the Industrial Tool Division.



MAJOS AVIATION CORP.

Maj. Gen. Walter R. Wenzel, recently commanding general of the AAP Technical Training Command, who has become stationed in a consulting capacity with Aviation Corp. After a distinguished career of over 40 yrs, Gen. Wenzel is being retired from the service. During the World War, Gen. Wenzel was assigned to the air branch of the Army as commander of flying cadets at Wright Field, later commanding the field. Just after Pearl Harbor, Gen. Wenzel became acting chief of the air corps, remaining in that capacity until the creation of the AAP.

LIGHT FROM FLOORS

makes your lighting system more efficient



Many eye care industry's finest and best tools. But they are useless without light. And the amount and quality of light depends not only on the light source but also upon reflection and diffusion.

Light-colored walls and ceilings lend much more light to reflect and diffuse light. Today, light-colored floors also are being used to improve waste light. These new light reflecting floors are built of mosaic. They are made with Atlas White Portland cement instead of gray portland cement or other darker materials. Hence they reflect more light—white light. This improvement in illumination—

- reduces eyestrain, headaches, and absenteeism
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Maintenance of white-cement floors is simple—frequent sweeping, occasional damp mopping, periodic scrubbing. Send for literature, "Light From Floors," White Portland Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York City.

ATLAS WHITE CEMENT

For Light-Reflecting Floors

Pan American Asks U.S. Chamber To Reconsider Foreign Route Policy

Declares Resolution on International Air transport policy in "fundamental conflict" with views of industry.

Pan American Airways, disagreeing with a resolution on international air transport policy for the future by a United States Chamber of Commerce committee and its board of directors, has termed the resolution "in fundamental conflict" with the views of the air transport industry and asked its reconsideration.

A letter to Eric Johnston, president of the Chamber, from John C. Cooper, vice president of Pan American, complained that the air transport section of the report by the Chamber's International Transport Committee, which also dealt with merchant marine future poli-

cy, "recommend[s] an extensive new legislation which would permit surface carriers to control competitive airlines, as well as a new government policy in effect providing for freedom of uncoordinated passage."

■ **Cities At Stand.**—Cooper pointed out that the full membership of the Air Transport Association is opposed to any change in legislation to permit surface carriers to acquire control of competitive air carriers. He shares this view, he said, and therefore would not subscribe to the committee's report. Cooper said the Aviation Subcommittee was formed without W. A. Patterson, president of United Air Lines. Ralph S. De-

mea, vice-president and general manager of American Airlines, or himself, although these three were on the full committee. Instead, airline members on the subcommittee were John E. Slater, executive vice-president of American Export Airlines, and S. J. Solomons, president of Northwest Airlines, whom Cooper described as "officers of the only two American-flag airlines found by the Civil Aeronautics Board to be controlled by surface carriers."

■ **Feasible.**—A footnote to the report said that in the committee, Solomons and Deane, dissatisfied from the surface participation recommendation "of it involves changes in the existing law." The committee was "less than unanimous" that there should be no general prohibition of such participation "for membership companies in air transport in conjunction with their services." "We understand clearly the basis of the contrary idea do not consider it valid. The decision should be made on the facts in each case."

Cooper declared that "90 percent of the American-flag international air transport industry is opposed to the freedom of air or any similar policy under which the United States would relinquish sovereign control of its air space. Important domestic interests in the air transport industry also share this view."

■ **Excluded Competition.**—The committee's explanation of its previously published resolution and need was evident for "prompt determination" of international air transport policies. Advocates of monopoly for operation of all such services, it was said, have advanced the argument that chaos and disadvantage to American in competition with foreign air lines would result from diversity of ownership.

"We believe that to be an incorrect view," the committee stated. "The choice is not between monopoly and chaos. We believe a much wiser choice is a system of regulated competition."

Airport of Future Described by Burden

Commerce Dept. side wings separate fields for different types planes.

Separate airports to accommodate different types of planes are seen by William A. M. Burden as the logical accompaniment to the increase in air traffic, diversification of aircraft types and performance, and the growing amount of instrument flying by scheduled carriers.

EVOLUTION IN COPTERS:

Refinements in construction are shown in these photos of the pioneering Sikorsky VS-300 (left) described by United Aircraft Corp. as the country's first successful helicopter, and the first production model of the series.

Burden, who as special aviation assistant to the Secretary of Commerce, offered his ideas on airport development at a recent Johns Hopkins Urban Planning Conference at Baltimore, where he spoke on air traffic and airports in relation to urban planning.

■ **Reduced Example.**—Just as railroad freight yards are apart from passenger stations, so cargo planes may land some day at airports accessible to industrial areas and passenger planes nearer business and residential districts, he said. Plans will include loading platforms and railroad sidings for efficient handling of air freight would characterize the cargo airport.

He doubted, he added, that "concomitantly separate" would come soon after the end of the war, despite the anticipated rapid development in air cargo operations, "except in our great metropolitan areas." But he suggested that communities base such a possibility in mind and reserve alternate airport sites until determination of future air traffic.

■ **Speculation.**—Three types of future airports may be expected, he said, though speculation. One would be airline airports for scheduled operations, including air terminals as they are now known, commuter airports and cargo airports. Second, miscellaneous service ports for sales, charter service, maintenance and overhaul, flight testing, manufacturing and flight training. Third in community importance, though of more concern to individuals, would be civilian flying fields.

Airline airports, he predicted, will be of varying sorts, depending on

individual communities, to serve transoceanic or transcontinental traffic, intermediate operations as present domestic routes, and local service. He suggested that terminals for transoceanic and transcontinental and some intermediate services be on outlying sites, linked to the community by express highways and perhaps helicopter shuttle service eventually. At sites which are junction points of heavy air routes, alternate terminals should be planned to reduce peak traffic at the main port and speed up weather landings.

■ **Local Airports.**—Local and feeder line airports, he said, will be as close to the community's center as possible, if such traffic is to develop. Miscellaneous service airports should be an investment of airline routes to avoid interference with traffic converging on airline airports, and private flying fields should be distributed through metropolitan

areas so that they will be within 15 to 20 min. of as much of the residential district as possible.

■ **Main Ports Too Small.**—In stressing the importance of site selection for these airports, he declared that one of the country's largest cities—New York, Chicago, Philadelphia, Detroit, Los Angeles, Cleveland, Baltimore, St. Louis, Boston, Pittsburgh and Washington, in their population rank—"have been burdened with commercial airports too restricted in size or in too densely populated areas for adequate air transport operation and expansion."

Cleveland is the exception, he said, with its 1,000-acre municipal airport in open country twelve miles from town, and yet there, lack of a connecting express highway has been an inconvenience.

Growth of aviation, Burden declared, provides "great opportunities for improved development of urban areas. Airport patterns must be determined, and then adhered to as closely as trends in aviation, economics and topography permit."

Transport Record Set

Trans-Canada Air Lines recently established a new Montreal to Britain record of 11 hr. and 55 min. in a large transport plane. TCA said this was 36 min. less than the previous record set on the first flight of the new service on July 12. In addition to passengers, the plane carried 4,700 lb. of mail.

The service is designed to serve members of the forces, government officials and technicians engaged in the war production.



TRANS-CANADA "RUBBERIZES" PROPS:

The girl in Trans-Canada Air Lines' overhead bag is applying a rubber coating to a propeller to combat icing conditions. TCA is believed to be the only airline using this method, the result of experiments by the National Research Council of Canada. Company officials say the rubber is an efficient vehicle for conveying alcohol the length of the propeller from the hub. The rubber is glued to the prop, the alcohol soaks its way into grooves in the rubber near the hub and then spreads to the tip, penetrating ice from forming there. Glycerine, formerly used, clogged engine fuel-lines, as a small amount was carried into the engine.



William A. M. Burden

SIMPLICITY OF HUNTER HEATERS BROADENS USES

Engineers Aid Application
of Universal Gasifier Burner
to Armed Forces and Other
Essential Services

FEATURES "STAINED-IN-STEEL" FLAME

CLEVELAND, OHIO—Growing demands for simple and efficient heating for military operations, possible technological and other great problems has resulted in the setting up of a special division of Hunter and Company of this city. The subdivision works with designers, builders, purchasers or users of special equipment for the armed forces or for the national civilian services. Because in the world area to which Hunter Heaters already have been applied resulted in this broadening of uses. This has been the result of the use in the extreme simplicity of the Hunter "Stained-In-Steel" burner, the fact that it will "grow out" as a big way "from any type of gasoline, from truck fuel to 100 octane.



Flame Completely Sealed

The basic unit is a completely self-contained radiator unit with highly effective areas of heat radiating elements. Also, ignition and combustion take place within the sealed steel casing, the only opening being an exhaust, which can be piped in as a standard hose. Hunter uses for both heating and ventilation multiple units, powerful blowers, built into the complete heater design. Heaters designed for operation from either 110-volt or 110-volt currents.

It would be impossible to list all of the uses to which the heating models can be put. Engineers with the armed forces and with companies building equipment are calling every day for applications hitherto unknown.

The basic principle is similar to the combustion of an automobile engine—just as simple, safe and sure. Models are made in 20-hp. models packages pricing out 10,000 lbs. per hour or in larger models giving any amount of heat required. The heating problems is between or outside of the standard models. Hunter engineers would readily work with your engineers in fixing specific needs.

Requests for product information bulletin "H-2" or for engineering data should be addressed to: Hunter and Company, 3540 East 17th Street, Cleveland, Ohio.

"Area Airlines" Urged For New Operators

James G. Ray, with CAB claiming
line should stay in own field.

By BARBARA FREDRICK

The airlines have passed their opportunity to get into the local feeder-pickup field and new operators should be permitted to develop "area airlines," James G. Ray, vice-president of Southwest Airways Co., of Beverly Hills, Calif., told the Civil Aeronautics board last week. He said existing airlines should devote their attention to their own route problems, domestically and internationally. No should surface across be permitted to enter the local air service field, but their airplanes be directed between ground and air operations.

He cited 8,740 miles of routes. They speak a day on the board. Representatives of the company were applied for 8,740 miles of local routes to serve 610 cities in eight southern and western states, he has a background with all American Aviation—on whose pickup experience he drew frequently in his testimony—and with subcommittee members. The company conducts four pilot training schools in Phoenix, Ariz., and operation for the Army what Ray described as two "true feeder routes," in the Los Angeles area.

In urging for local service by new individual companies, rather than the present airline or surface carriers, Ray pointed out that such service would require a separate set-up for operations, maintenance, dispatching, equipment and probably a separate set of books, if it were undertaken by airline operators.

Application Opposed—When Southwest first applied for routes, he and western carriers tried to show that public convenience and necessity did not call for such service, but that if the board found it was warranted, they wanted to run the lines themselves. He stated that a similar situation had arisen in Pittsburgh in connection with All-American's application.

Patents of the proposed type of service are hard to enforce, he told the CAB, but he predicted that most interest of the short-haul nature would be from "airline" fields to major trading centers in any event, there can be no area airline operation until 1949, in Ray's opinion.

Area Airlines—In describing "area airlines" he said they would be designed to offer local service within

a given area, as opposed to transcontinental and regional operations by the major airlines. He estimated that there are about 40,000 miles in which they would be justified, and said half of those were large enough to maintain local service from the nearest airport.

Community isolation should share experience with population as a factor in establishment of area routes, the witness asserted. He explained that a small town not served by other carriers might readily conclude more air mail on a local route than a larger city vied by railroads, bus lines, and air trunk lines. Towns 15 mi. apart, he suggested, could be served by the package system, while the feasible distance was 50 mi. when landings must be made. However, tests of pickup service have shown that it can be adapted to passenger use.

Eight Flights Needed—Average trading area service, as depicted by Southwest's application, probably would consist of seven routes total-



GIRLS SPEED MILITARY

Western Air Lines has hired co-pilots who are carrying and navigating military or travel to Air Corps bases and airports, but where they want to go in a hurry. Mrs. Christy Stewart of Los Angeles wrote Lt. Lee Mervin, WAC public relations officer, for whom Mrs. Stewart arranged a detailed interview on a recruiting tour.

ing about 270 mi. Right Hand would be required for twelve months a day, or 12 planes for 24 with two in reserve in each motorcade. Average daily mileage per plane would be 400 on the twelve-trip basis and daily flight hours would average four hours and a quarter, stopping at midnight and resuming early the next morning.

As the latest type of plane for this operation, he suggested a four-engine, twin-engine ship with a cargo capacity of 800 to 1,000 lb. On a twelve-round trip basis, cost of operation would run about 40¢ a mi., he estimated, but at 34 would cost about \$250,000 each. An exception to the two-engine requirement, he said, might be planes designed to carry mail and express only.

Fast Time at Airports—One major problem, if such a line is to be fast and frequent, is that of eliminating lost time at airports. In this connection, he proposed airports with single runways, at least 2,000 feet long, while a better length would be 4,000 feet, with a center terminal. The single-runway type of construction, he said, will permit landings close to town.

Air Giants 6 Years Off, Says Monro

PCA head sees no quick post-war
adoption of colossal craft.

The immediate post-war period will not bring to international operation the big planes that many persons are predicting, C. DeWitt Monro, president of Pennsylvania-Central Airlines, believes.

Instead, the four types of planes available for commercial use now are the ones that will be in use far from four to ten years after the war, he told the Cleveland Chamber of Commerce.

Realistic Thinking—Calling for more realistic thinking and less false prophecy, Monro declared the DC-3, the C-46, the DC-4 and the Lockheed Constellation, which with 12,000 in gross load is the largest of the four, are the "pieces of the immediate tomorrow."

Monro said that international and night operations in wartime were not a criterion for peaceful operation, since political considerations are not the determining operating factor. The PCA executive declared that the knowledge of aircraft limitations was probably the war's most valuable lesson to aviation.



ALASKA STAR RECEIVES LODESTAR

Lockheed Aircraft delivered the northern Lodestar Lockheed transport to Alaska Star Airlines recently, the first commercial Lockheed (which has gone to a 12-day lay in storage). General approval was obtained from government agencies.

Seadrums—Monro put in a good word for seadrums—PCA has applied for a seadrum route—containing direct service possibilities of the four planes with their ability of the floating landing places are available.

Over the great circle route of 2,900 mi., he said, the DC-3, the Constellation (C-46), and the DC-4 under positive factors, could carry neither passengers nor cargo, while the Constellation could carry five or six passengers and a 300-lb. payload. Over the 3,700-mile seadrums route, Monro added, the DC-3 could take 10 passengers and 375 lb. of cargo, the Constellation 35 passengers and a ton of cargo, and the DC-4 42 passengers and 845 lb. of cargo. The Constellation, by this method could fly 55 passengers and five tons of cargo, he estimated.

Costs—Costs of a recently predicted plane to fly from New York to London in 10 hours with 150 passengers, Monro said, would be close to 70¢ per ton mile, as against a maximum passenger revenue with full price of 30¢ per ton mile.

Larger airports will be needed, Monro said, for the character of increased traffic. Advertising it was difficult to predict air transport services accurately, he said and a conservative view would indicate a three-fold expansion of present services by the end of the first post-war period.

Pickup Line Elects

All American reports gains at annual stockholders' and directors' meeting.

President H. E. Bailey of All American Aviation reported to stockholders at the annual meeting that "important changes" occurred

in that line's financial condition between June 1 and Sept. 30.

Assets June—Assets Aug. 31, he said, were more than twice liabilities. They amounted to \$1,189,000 and \$584,000, respectively. He predicted that a "substantial" profit level for the first quarter of the current fiscal year, which more than covered annual dividend requirements on newly issued convertible preferred stock, would be maintained throughout the year. The prediction was based, he said, on a quarter \$3,000,000 backlog of business.

Stockholders approved sale of company stock at a preferred rate to all employees with the company a year or more Oct. 15, 1943.

De Post Widow Elected—Directors elected at the meeting were Bailey, Charles F. Bennett, W. Sam Carpenter III, Frank M. Donohue, Charles W. Wrenn and Mrs. Allison C. de Post, widow of Richard C. de Post, of Wilmington, and Arthur P. Davis, George S. Lutz and Grover Looney of New York.

SAE Maps Cargo Plane Study at Chicago

Design, operations, short haul to be discussed at Nov. 8 meeting.

A comprehensive study of air cargo problems, present and post-war, will be undertaken at a two-day meeting of the Society of Automotive Engineers at the Knickerbocker Hotel, Chicago, Nov. 8. The cargo plane design, operations short haul, coordination of air and surface cargo movements, packaging, tying and handling will be discussed.

Charles Wood, Douglas Aircraft and E. C. Wells, Boeing Aircraft,

will discuss design problems at the opening-day morning session. J. H. Prosser, professor of transportation, University of Texas, W. L. Birdwell, of Aircraft Repair Ltd., Canada, and J. G. Berger, Pan American Airways, will be afternoon and evening speakers.

Transport speakers will include H. W. Anderson, Whittaker Corp.; J. H. Casey, United Parcel Co.; and J. H. McLeod, Hinde & Deuch Paper Co. A dinner meeting, with Casey Jones as toastmaster, and with the speaker announced completed the session.

Originally planned as a Chicago section SAE meeting the session has taken on national importance because of interest in its subject. Chairman of the various sessions include Edward Warner, Jack Berens, Melvin Miller, and Russell Furber.

Plane Radio Depot

Airway signal aid equipment will be housed in a five-story new \$600,000 aircraft radio depot now being constructed at Dayton, Ohio. On a 14-acre tract formerly the old Johnson flying field, four reinforced concrete barrel-type warehouses, 600 ft. long and 100 ft. wide, and an administrative building now being erected. Col. W. J. Dine, airport depot commanding officer, said the depot would remain as a permanent installation after the war.

Air Planning Parley

A National Aviation Planning Conference, called by the National Aeronautic Assn., will be held in Oklahoma City, May 11-12. Establishment of over-all plans and policies by controlling agencies and participating interests is the aim of the conference, which will be attended by heads of manufacturing, operating and servicing organizations of the industry as well as national, state and municipal officers carrying responsibilities in this connection.

Transport Meeting Set

Government and civilian authorities will meet in Washington Oct. 26 to discuss present and future air transport problems, under auspices of the Institute of the Aeronautical Sciences.

Speakers at the meeting will include Col. H. B. Harris, John C. Lathrop, William Littlewood, Robert Buck, Greiner Looming and C. Bedford Moore.

FINANCIAL

Danger to Aircraft Earnings Exists But Fallacy Seen in Harvard Study

Reduction of incomes by contract renegotiation could be largely offset through strict application of Excess Profits Tax rather than tie up Army experts with endless bookkeeping chores.

By ROGER WILCO

If it isn't renegotiation, taxes will take their toll of aircraft earnings. In recent hearings before the House Ways and Means Committee, the aircraft industry said renegotiation processes were draining its working capital and were harmful in other ways to its financial condition. In support of this view, a study prepared by the Harvard Business School was presented. This study showed the average aircraft manufacturing company in 1942 had its earnings reduced to \$7.2 million from \$11.1 million through renegotiation of contracts. This study covered eleven major aircraft producers accounting for 75 percent of the industry and showed the average airplane maker refunded \$16.6 million to the government last year. The effect of this renegotiation was to eat working capital 34 percent below what it otherwise would have been.

Fallacy.—Now there is no question that the reduction in working capital is detrimental to the best interests of the aircraft industry—but there is a fundamental fallacy in the approach used by the Harvard Business School study. As a practical matter, of every dollar renegotiated for the aircraft industry, only about 20 to 30 c is the average comes from earnings, with the rest from taxes. In other words, were earnings not reduced by renegotiation, a substantial portion would have in any event been reaped by excess profits taxes.

Example.—An example is provided by Boeing's 1942 report. This company completed its renegotiation of contracts and is faced with no loss; its adjustment in this respect for 1942, a total of about \$24,300,000, was refunded on 1943 earnings, but Boeing's President Johnson observed that "if the refunds were not made, approximately 60 percent of the re-

fund) would have been returned to the government through taxes." Like conditions pertain, in varying degree, with every aircraft company making refunds through the renegotiation law. This suggests that rather than attack the renegotiation process as the chief target, the aircraft industry might seek a frontal assault and give prime consideration to the effects of the tax laws on earnings.

Savings Illusion.—In fact, it has long been suggested, in many quarters, that it would be more simpler and far less expensive to industry if war profits were renegotiated directly through the tax code rather than in a roundabout fashion by renegotiation. All assurances made by government agencies that the Treasury law "saved" billions through renegotiation is an illusion. A substantial percentage of these alleged "savings" would in any event have been absorbed off through income taxes. Practically, there would be no confusion, no need of the huge waste in manpower caused by government "renegotiators" constantly going over books, and industry would not be subjected to repeated receipt of litigations on the same contracts. The direct tax approach would confer control and regulation of earnings in one government agency—the Treasury, and would eliminate officers of the Army Navy and representatives of other departments and keep them out of the hair of harassed industry.

\$1 Beech Dividend

Walter S. Beech, president and chairman of Beech Aircraft Corp., is announcing a \$1 dividend on the company's common stock payable Oct. 20, noted that in the past three years the company had met all its

production schedules, despite the fact 1942 output was more than twice the 1943 volume.

Orders were sufficient, he said, to keep the company operating at capacity for more than a year ahead now in possible in the program—engine planes and the company has produced not only all-metal aircraft, but also hundreds of stressed skin plywood monoplanes in addition to medium and light twin-engine transports.

NAC Nets \$493,523

Nine months' income includes \$416,995 profit from sale of securities.

National Aviation Corp. reported net income for nine months ended Sept. 30, was \$493,523, including \$416,995 net profit on sale of securities and after expense and federal income tax. In the 1942 period, net was \$483,891 after \$13,355 loss on sale of securities.

Assets Worth \$17.8.—The corporation reported indebtedness total value as of Sept. 30 was \$17.60 a share and that securities with a readily ascertainable market price were included at market value, accurate within 100 c at and in the report subject to audit. June 30, 1942, net asset value was \$16.91 a share, while on Sept. 30, 1942, the value was \$14.30.

TWA Buys Interest In TACA Lines

Lowell Weiss Continues as Chief Executive of Company British West Indian Airways and British Companies Affected.

Transcontinental and Western Air and other United States investors have acquired a substantial interest in TACA, Central American Airlines, through a stock purchase that has added \$2,380,000 to TACA's treasury.

WANTED AERONAUTICAL ENGINEERS

Good field and shop experience for maintenance, design offices and shops. No military work.

HELICOPTER DEVELOPMENT

Design and development of helicopter engine and transmission. Excellent opportunity for advancement in this work.

AERONAUTICAL PRODUCTS, INC.

21100 Ryan Road, Detroit 21, Michigan. Telephone: TRunk 2-2200.

Peak B-17 Output

Production of Boeing B-17 Flying Fortress will continue at the maximum rate, coming as late as possible in the program—engine planes and the company has produced not only all-metal aircraft, but also hundreds of stressed skin plywood monoplanes in addition to medium and light twin-engine transports.

Jack Frey, president of TWA, and Lowell Weiss, who continues as TACA's president and general manager, disclosed in Washington that the transaction had been effected after about 30 days of quiet negotiation, and gave some of the details.

TWA's interest in the deal amounted to approximately \$1,300,000, while the other \$800,000 divided about equally among the Adams Express Company, investment trust, Time, Inc., air travelers, in an Aviation Investment Trust, and Stewart McCandless & Sons. McDonald is chairman of the Board of Inter-American Airways, S. A., Parent Company, which now becomes TACA Airways, S. A.

The parent Company owns 100 percent of TACA Transpac Airline Co. Central American Airlines Agency, Inc. (formerly Inter-American Airways Agency, Inc. with offices in New York and Mexico) 50.9 percent of Aerovias Bra-

sil, S. A. and 46 percent of the British West Indian Airways.

Frey said TWA also has acquired a 9 percent direct interest in Aerovias Brasil, involving a stock purchase agreement under \$100,000, to separate negotiable. The remainder of the stock of Aerovias Brasil—60.1 percent—is owned by Brazilian interests, Yates said.

All the \$1,300,000 involved in the above transaction goes into the TACA treasury, since Yates reserves has full interest in the company. TACA has an authorized capitalization of \$5,000,000, although stock for the full amount never has been issued. Plans are being made for a public offering in the near future which will put more stock in United States hands, Frey and Yates said. Purpose of the new financing was not disclosed, although it was said more details on the program may be forthcoming.

UAL Converts DC-3s Into "Cargoliners"

United is starting its new transcontinental cargo operations with "Cargoliners." DC-3s stripped of passenger furnishings and equipped with re-inforced floors, plywood siding, steel screened windows and cargo bins.

C. P. Guadagni, director of the Line's Air Cargo Department, points out the contrast with regular airliners used in cargo service with passengers. The planes will carry about three tons of cargo compared with an average of 1,400 lb. on United's combination passenger-cargo mainliners.

Daughless Used.—Daughless used on the service now Daughless recently turned back by the Air Transport Command, United received three, American and TWA one each.

Give Your Employees Handy Bond Booklet

Heavy paper stock cover, in red, white and blue, 16 pages, to reveal number, value, purchase and maturity dates of 128 bonds. Pocket size 3 1/2" x 5 1/2", or per single use 2 1/2" x 3 1/2", with four perforations. Cost is less than 2 cents per employee.

Sample and prices on request. PUBLICATIONS PUBLISHING COMPANY 521 FIFTH AVENUE • DEPT. AN • NEW YORK 17, N. Y.



For Airliner Type Tests Now

CONTRARY TO GENERAL BELIEF, introduction of new transport types on the airlines—no matter how strenuous a workout they have been given on ATC wartime routes—will require complete testing by the Civil Aeronautics Administration before they can be certificated for public, scheduled flying.

Of the various war transport types, only the Douglas C-47, or other DC-3 variations, can be put into airline service within a few weeks after the Armistice. All that will be required for the C-47 will be proof that conversion has been made to conform with the long-standing DC-3 requirements.

The Curtiss C-46, Douglas C-54, and the Lockheed Constellation, however, must undergo months of performance measurements and flight testing to determine allowable loads under all conditions, performance with inoperative engines, requirements of controllability, stability, and detailed inspections for planes such as the Consolidated Liberator or Liberator Express, which were never given CAA-

prescribed factory strength tests, the time would take even longer.

Because of the complexity of such tests, and the number of specialists required for each aircraft type, the flight engineering and factory inspection division of CAA would be swamped if it were suddenly assigned more than two types.

The results would be chaos and delay for the airlines, the CAA, and the public, yet without some advance planning that is exactly what CAA officials fear.

At the earliest possible moment that progress of the war will permit, the War Department should make available to a manufacturer one or two planes of at least one airline-type for transfer to CAA. Officials believe that within six months after CAA receives a C-54, for example, tests can be completed and the type certificated for air carrier operation. Only this procedure will permit the airlines to start use of modern transports within a year after the War Department releases aircraft.

The Glider's Future

GLIDER MANUFACTURERS are neglecting a golden opportunity to satisfy the public's demand for facts about post-war glider transport possibilities. By releasing non-secret material on the progress of the art to date, by coordinating a carefully prepared public relations program, they could—without overclaiming or exaggeration—make the facts clear on this inherently interesting mode of transport. A well-prepared information program started now would reap important dividends at the end of hostilities when industry and Congress will be ready to make important decisions for the future. An informed public will demand full utilization of the glider in public transportation.

Glider manufacturers are convinced that, properly designed and engineered, the glider will provide economical commercial transportation for some classes of commodities. Wartime gliders now in the air, represent merely a compromise between efficiency and rapid output. Again, this fact is not generally understood. Too many sour notes on glider possibilities are being based wrongly on quickly designed and built craft.

Aerodynamic improvements appear to be the key to economic feasibility. War models have relatively high head resistance. Present gliding ratio

of about eight to one could be improved all the way to a ratio of twenty to one, depending on proposed cruising speed and load conditions.

High efficiency models would eliminate many complaints of overloading the low plane, and would make commercially advantageous trains of several gliders. Furthermore, glider advocates contend that no towed-glider yet has been tested under fair conditions, which calls for a specially designed tug. The next year should see at least one such specialized tug flying. Its performance is keenly awaited by those who are convinced of the glider's commercial future.

A proper educational program would make clear the surprising low cost of mass-produced, perfected gliders, the simplicity of repairs, the low manpower requirements—such as the one-man crew—for operation, maintenance, and repair.

Like the airplane, the glider has always suffered from over-enthusiasm by those who expect it to do all jobs better than any other transportation. It can never compete in some respects with the powered plane but it can assume an important role in bringing all aviation closer to every man. This is the story which a recognized, authoritative glider association could tell.

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